

# Mathematics Department Colloquium

Organizer(s): Kenneth Ribet

Thursday, 4:10–5:00pm, 60 Evans

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Apr. 9      **Nalini Anantharaman**, Ecole Polytechnique and UC Berkeley  
*Entropy and the localization of eigenfunctions*

On a compact riemannian manifold, the Quantum Unique Ergodicity conjecture asks about the behaviour of eigenfunctions of the Laplacian, asymptotically when the eigenvalue approaches infinity. This is known to depend a lot on the behaviour of the geodesic flow (completely integrable vs. chaotic). In the ‘chaotic’ case (for instance on negatively curved manifolds), the conjecture says that the probability measures  $|\psi(x)|^2 dx$  should converge weakly to the Riemannian volume measure (when  $\psi$  is a normalized eigenfunction of the Laplacian and the eigenvalue goes to infinity). We will discuss some advances in this direction.